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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,569	12/22/2003	Jeffrey D. Rupp	FGT 1852 PA	1568

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EXAMINER	
NGUYEN, CUONG H	

ART UNIT	PAPER NUMBER
3661	

DATE MAILED: 10/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/707,569	RUPP, JEFFREY D.	
	Examiner	Art Unit	
	CUONG H. NGUYEN	3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is the answer to the communication received on 8/02/2006, which paper has been placed of record in the file.

2. Claims 1-20 are pending in this application.

Drawings

3. The submitted drawings are acceptable for examining purposes.

Response

4. The examiner agrees to examine claims 1-20 based on the applicant's argument on page 6 of the paper dated 8/02/2006. Since the applicant claims what already being suggested in Morizane et al. reference, the examiner again applies that reference herein.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-4, 6-12, 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morizane et al. (US Pub. No. 2002/0026274 A1).

A. As to claims 1, 9, 19: Morizane suggests a sensing system for a vehicle comprising:

a single sensor having a position with coordinates on the vehicle (including a camera's orientation), detecting vehicle 20A, and generating a detection signal to VEHICLE CONTROLLER 17 (see Morizane et al., Fig. 1 ref. 11, 15A, 17 and para. [0069], [0091].

"[0069] Let us assume here that a reference parameter value for geometric feature value of the image patterns 20a of the leading vehicle 20A is defined based on the speed V of the master vehicle 20B. For this purpose, an existing vehicle speed sensor 110 must be connected to the ACC unit 13 in place of the travel start detector 12 as shown in FIG. 11, in order to detect the traveling speed V of the vehicle 20B successively. While the hardware is otherwise the same as that of the system shown in FIG. 1, a microcomputer 15' of the system shown in FIG. 11 performs processes different from those of the microcomputer 15 in FIG. 1. Therefore, a reference parameter value setting process section 15'A implemented by the microcomputer 15' of the system in FIG. 11 includes (8) a braking distance calculation process portion 15'A.sub.1 for calculating a braking distance L required by the vehicle 20B to stop based on data V outputted from the vehicle speed sensor 110 and (9) a coordinate transformation process portion 15'A.sub.2 for calculating a reference parameter value for geometric feature value of image patterns 20a of the leading vehicle 20A based on the braking distance L calculated by the braking distance calculation process portion 15'A.sub.1.

Detail Description Paragraph:

[0091] If the vehicle data V from the vehicle speed sensor 110 does not indicate 0 km/h, similarly to the processes performed at steps 131 and 132 of the flow chart in FIG. 13, the braking distance calculation process portion 15'A.sub.1 calculates a braking distance L for the vehicle 20B based on the latest vehicle speed data V, and the coordinate transformation process portion 15'A.sub.2 thereafter calculates a reference parameter value for geometric feature value of the image patterns 20a of the leading vehicle based on the braking distance L. The reference parameter value selection process portion 15"A.sub.3 updates the reference parameter value W.sub.0 with the value thus calculated (step 179). Thereafter, processes at step 180 and subsequent steps are performed in the same way as in the case wherein a quantity of change of the vehicle speed data V within a predetermined time does not exceed a threshold."); and

a controller coupled to said sensor and generating a safety system signal in response to said coordinates and said object detection signal (see Morizane et al., Fig. 1 ref. 17).

Morizane et al. do not expressly disclose that wherein said controller determines position of said single vision sensor relative to a predetermined reference on the vehicle that has determined coordinates.

However, Fig. 1 shows a controller 17 would take into account a position of camera 11, and REFERENCE PARAMETER VALUES (block 15A) including a relative vertical position of a camera 11 for processing output signals 16A, 16B, and 16C.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Morizane et al.'s teaching to suggest a safety sensing system for a driven vehicle because Morizane et al. also use reference parameter value settings which could define CAMERA 11's reference.

B. As to claims 2, 16-17: Morizane et al. also suggest a single vision sensor is a single two/three-dimensional vision sensor wherein a range is a distance between 2 vehicles (see Morizane et al., Fig. 14 with x-y, and z axis).

C. As to claim 3: Morizane et al. also suggest a single vision sensor is camera (see Morizane et al., Fig. 2A ref. 21).

D. As to claims 4, 18, and 20: Morizane et al. also suggest a vehicle controller 17 performs an *adaptive* cruise control task in response to said safety system signal (see Morizane et al., para. [0002] The present invention relates to an ACC (adaptive cruise control) system for extracting information associated with,a following distance between a vehicle and another vehicle leading the same from an image of the leading vehicle photographed with a camera and for controlling the following distance between the vehicles based on the information.).

E. As to claim 6: Morizane et al. also suggest a controller 17 determines position of said camera 11 relative to coordinates of an object of the vehicle. Every position needs a predefined reference for calculations; in this case, a hoodline's coordinates are used (instead of other "fix" positions in a vehicle) as references for knowing that sensor's position; therefore, this idea is not inventive according to Morizane et al.'s teaching.

F. As to claims 7, and 14-15: Morizane et al. also suggest a controller 17 determines a size and an up-angle of said an object and determines range of said object (Fig.4 suggests a size of an object is obtain from step 44, para.[0004] suggest that distance to an object is measured and "searched the register data to get vehicle data associated with the vehicle image data that matches the first extracted image out of the register data", this gives a size, and up-angle of an object.

G. As to claim 8: Morizane et al. also suggest a memory coupled to a vehicle's controller 17 and storing a predetermined position of said signal vision sensor (see para [0004] "extracted image out of the register data" this confirms a memory is used).

H. As to claim 11: The examiner respectfully submits that many electronic system has been designed with a default status/condition (e.g., when a television is turned on, last recent seen channel is a default channel – reflecting in an electronic flow-chart as a common basic design). It is a design choice to have a default condition here preset by a manufacturer (as a beginning of a cycle wherein it initially as a well-known default condition (just a distance from a camera to an object; i.e., a same height level is assumed as a default condition).

Morizane et al. generate an object detection signal in response to said determination (see Fig.1).

I. As to claim 12: Morizane et al. use a vehicle processor to control ACC to reducing traveling speed of the vehicle when height and width of said object appear to increase in size – in other words, when 2 vehicles are getting closer (see Figs. 10A-C ref. 20a – 3 pictures show 3 different sizes of car 20a in according to changing distance M between 2 cars).

6. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morizane et al. (US Pub. No. 2002/0026274 A1), in view of Hirabayashi (US Pat. 5,874,904).

As to claim 13: The rationales and references for a rejection of claim 9 are incorporated.

Morizane et al. do not disclose a step that "determining an object to be at a different elevation. than the vehicle when said object appears to maintain a same height and width, but change in vertical position".

However, Hirabayashi discloses an inter-vehicle distance measurement apparatus comprising determining an object to be at a different elevation than the vehicle when said object appears to maintain a same height and width, but change in vertical position (see Hirabayashi, "The reason for the above determination is that since an obstacle, such as a vehicle, has a certain height perpendicular to the road surface, as shown in FIGS. 9 and 10, substantially the same distance L(W.sub.i up) as the measured distance L(W.sub.i min) appears at the window address W.sub.i up higher than the minimum window address W.sub.i min by a distance equal to the minimum height of the vehicle. On the contrary, if the vehicle is not present at the measured distance L(W.sub.i min), the measured distance is L'(W.sub.i up) in FIG. 10 at the window address W.sub.i up higher than the minimum window address W.sub.i min by a distance equal to the minimum height of the

vehicle. Thus, L(W.sub.i min)=L'(W.sub.i up) is not satisfied." – in other words, an object at different perpendicular level with ground is already taken into account).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Morizane et al. with Hirabayashi to suggest about "determining an object to be at a different elevation than the vehicle when said object appears to maintain a same height and width, but change in vertical position" to include a situation to calculate distance of 2 vehicles on up-hill and down-hill roads.

Conclusions

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CUONG H. NGUYEN whose telephone number is 571-272-6759 (email address: cuong.nguyen@uspto.gov). The examiner can normally be reached on 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, THOMAS G. BLACK can be reached on 571-272-6956. The Rightfax number for the organization where this application is assigned is 571-273-6759.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Please provide support, with page and line numbers, for any amended or new claim in an effort to help advance prosecution; otherwise any new claim language that is introduced in an amended or new claim may be considered as new matter, especially if the Application is a Jumbo Application.

CUONG H. NGUYEN
Primary Examiner
Art Unit 3661